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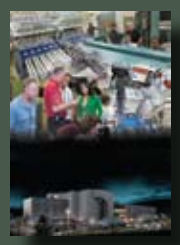


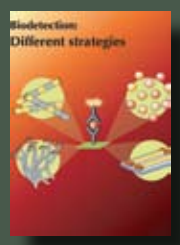



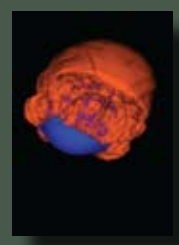

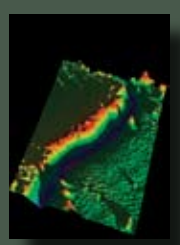





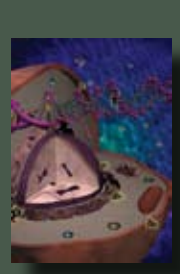

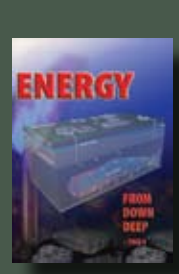

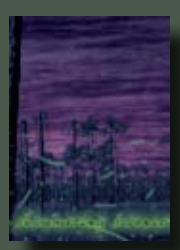





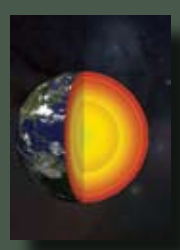

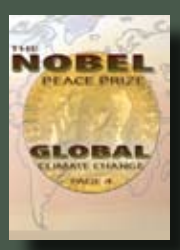

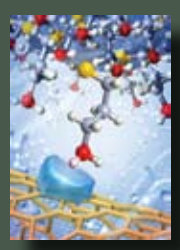

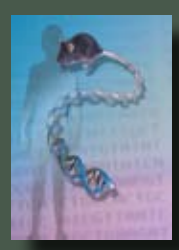
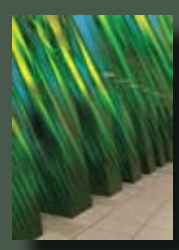



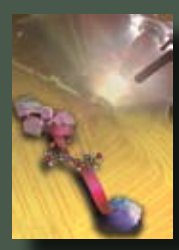

LOOKING BACK at 2007

A look back at a year of transition

2007 was a year dominated by the management contract transition and federal budgetary uncertainty, but Lawrence Livermore continued to deliver vital mission milestones and rack up remarkable science and technology achievements in such areas as stockpile stewardship, scientific computing, homeland security and global climate change.

"Change can be difficult and stressful," Director George Miller told employees in a March 2007 all-hands meeting, "but we have had an organizational agility that has allowed the Laboratory to remake itself since its founding by Ernest Lawrence and Edward Teller."

"We have had an organizational agility that has allowed the Laboratory to remake itself once a decade since its founding by Ernest Lawrence and Edward Teller."

— George Miller in March all-hands

Highlights from 2007 include: early in the year, a Lab team won a longstanding competition within the National Nuclear Security Administration (NNSA) to design the proposed Reliable Replacement Warhead (RRW); NIF reached the 90 percent complete mark in preparation for next year's start of experiments; four teams and two individuals received NNSA Weapons Awards of Excellence; a LLNL Advanced Simulation and Computing program team won the prestigious Gordon Bell Prize – for the third year in a row; Lab teams won five R&D 100 awards, also called Oscars of invention; and some 40 Lab scientists saw their efforts to help understand climate change win recognition when the report by authors around the world shared the Nobel Peace Prize.

Many more individual awards and recognition from 2007 are listed on pages 4 and 5 of this special edition.

George Miller

New leadership and structure

Shortly after NNSA announced the awarding of the contract to manage and operate the Laboratory to Lawrence Livermore National Security, Limited Liability Corporation (LLNS) in early May, LLNL Director and LLNS President Miller inaugurated a series of town hall meetings to unveil the structure and leadership team that would take effect Oct. 1, 2007.

Miller set the course for the year ahead, emphasizing the LLNS management team would take an integrated approach, "capitalizing on the strengths of the LLNS partners as well as the efforts of each Laboratory employee." The five-member LLNS partnership retains an ongoing presence from the University of California; Bechtel, BWX Technologies, Washington Group and Battelle are the industrial partners; and Texas A&M University provides an academic alliance.

Under LLNS, a 12-member board of governors was appointed to oversee management and operations of the Laboratory. Miller formed five principal directorates aligning programmatic responsibilities and reflecting current Lab missions, and named their leaders: Cherry Murray, Science and Technology; Frank Russo, Operations and Business; John Doesburg, Global Security; Ed Moses, NIF and Photon Science; and Bruce Goodwin, Weapons and Complex Integration.

Barbara Peterson led the LLNL transition team, with Tom Giaconda leading the LLNS team.

The year 2007 also saw some leadership changes in Washington D.C. with Thomas D'Agostino named as NNSA administrator in October. He succeeded Ambassador Linton Brooks, and carried forward plans to continue reducing the nuclear weapons complex. In May, Bill Ostendorff was sworn in as NNSA principal deputy administrator by Energy Secretary Samuel Bodman.

Looking to the future

Complex 2030 became Complex Transformation. NNSA provided further details of the Laboratory's role. In an April visit, Martin Schoenbauer, deputy NNSA administrator for Defense Programs, outlined four strategies: transform the nuclear stockpile; modernize the complex; transform operations; and drive NNSA's science and technology base.

Complex transformation is being strongly supported at the Laboratory, where it calls for reducing or transferring some LLNL programs, notably the Superblock, and work at the Lab's Site 300 experimental test site. As the year closed in December, NNSA announced its vision had been signed and approved in the Preferred Alternative for Complex Transformation, which is a draft Supplemental Programmatic Environmental Impact Statement (SPEIS). Public meetings are slated for March 2008 in Livermore and Tracy.

Looking toward future technological progress, NNSA has designated Laboratory "centers of excellence" including: a focus on nuclear design and high-density physics; a supercomputer platform host site for the Sequoia petascale machine; and a high-explosive research and development center, housing the High Explosive Applications Facility designed for explosives formulation, processing and confined testing.

Acknowledging future uncertainty in federal budget priorities and nuclear defense policy, Bruce Goodwin, principal associate director for Weapons and Complex Integration, noted toward the end of the year that "complex transformation must take place with or without the Reliable Replacement Warhead."

Workforce restructuring

To address a Lab budget shortfall that could be as much as of $300 million, the NNSA directed the Laboratory to draw up a site-specific plan for workforce reductions, as required by Section 3161 of the National Defense Authorization Act (A general 3161 plan was posted in October).

Flex-term employees and supplemental laborers received written notification under the WARN Act (Worker Adjustment and Retraining Act) in late November regarding the planned workforce reductions that will be required by the end of this month. Miller announced that an anticipated 500 supplemental and flexible workforce employees could be released as part of an overall restructuring plan to alleviate the shortfall. A second decision involving potential voluntary and involuntary restructuring for the career indefinite workforce will be announced later this month.

In October, Miller announced he had delayed a decision to move forward with the Lab's annual raises or the CIP (compensation increase program), a $25 million cost for which the Lab has received no additional funding from the DOE. A final decision on the annual packages will be made this month with three possible options: whether to implement a raise retroactive to Oct. 1; whether to implement a non-retroactive raise or whether to forego a raise package.

Deputy Director Steve Liedle initiated an effort to cut operating costs and expenses across the Laboratory – with a direct goal of realizing $35 million in cost savings by the end of 2008. Since mid-November, the Lab has launched cost cutting initiatives in energy conservation, information technology and other operational areas.

In November, Liedle formed a "kitchen cabinet" made up of representatives from all Laboratory programmatic, mission and operational areas to identify and review opportunities for cost savings. In addition, he has solicited ideas from employees and a special email address was created to capture cost-saving suggestions: save-dollars@llnl.gov.

In a Nov. 12 all-hands meeting, Miller acknowledged how difficult the prospects of workforce reductions are for the Laboratory community. "This will take all of us pulling together. We will do this only if we realize it's only us, and we throw away the idea 'they are doing this to us,' he said. "I am looking for your hearts, minds, talent and dedication. I assure you, you have mine."

On the following pages is a month-by-month selected list of highlights from 2007 in Science and Technology; People; and Operations.

LOOKING BACK AT 2007

JANUARY

Science & Technology

At the National Ignition Facility (NIF), Cluster 3 in Laser Bay 2 is the first to become operationally qualified. All 48 beams within the cluster are fired simultaneously, with all subsystems participating to test end-to-end functionality. In the process, NIF becomes the world's most energetic laser facility, the first to achieve over a MegaJoule of infrared laser energy.

At Site 300's Contained Firing Facility, the 70th and 71st experiments of the 661/671 series are conducted, completing a regime whose first shot was fired Jan. 18, 2001—a full six years ago.

Operations

The Department of Defense Cost Analysis and Improvement Group visits the Laboratory. Guests include Curtis Kohl, Steven Miller, Tom Henry and David Hunter from the Office of the Secretary of Defense, and Patrick Higgins from the National Nuclear Security Administration.

The University of California (UC) launches an online ethics briefing as a training requirement for all UC employees to familiarize them with UC's Statement of Ethical Values and Standards of Ethical Conduct and heighten awareness and understanding of ethical duties and obligations.

Five new self-service capabilities are added to LAPIS, the Lab's official system for managing employee information. In addition to verifying and updating personal information, employees can view their payroll earnings statements, manage direct deposits, change W-4 withholding elections, view benefits summaries and request a reprint of previously-issued W-2 forms.

The Security Organization's Protective Force Division graduates 13 security police officers.

People

Frieder Seible, dean of the Jacobs School of Engineering at UC San Diego, and a group of UCSD colleagues visit the Lab and discuss with Laboratory managers ways to collaborate on research.

NIF target technology: prototype 2-millimeter diameter beryllium capsule suspended between two ultra-thin plastic sheets used to facilitate handling of the shell.

"Dream, Imagine, Explore," is the theme of the 28th annual "Tri-Valley Expanding Your Horizons (EYH) in Science and Mathematics" conference for girls in grades 6–12 from the Tri-Valley.

Researchers from the Laboratory, Lawrence Berkeley, the Department of Energy Joint Genome Institute (JGI), and the University of Chicago, chip away at deciphering tissue-specific signatures in humans. In results in the journal *Genome Research*, they explained a novel computational approach to translating DNA sequence data into functional signatures corresponding to specific tissues of the body.

FEBRUARY

Science & Technology

The American Association for the Advancement of Science (AAAS) holds its annual conference in San Francisco. The Laboratory participates with information booths and a "Fun with Science" display.

The Dominion A Cappella Ensemble celebrates the life of Martin Luther King Jr.

Operations

The new E85 fueling station nears completion at the Laboratory, providing the infrastructure to become one of the largest consumers of E85-fueled vehicles in California.

The Health Services Department is the subject of a re-accreditation survey by the Accreditation Association for Ambulatory Health Care Inc. (AAAHC). The survey is used to evaluate Health Services' continued compliance with AAAHC standards and to determine if accreditation should continue. Health Services receives the highest level of accreditation in both 2001 and 2004.

A group of national laboratory managers sat down with employees to present "Life After Transition," a discussion of mission, workforce and operational changes that took place after their laboratories experienced a change in management.

People

Carolyn Bertozzi, director of The Molecular Foundry at Lawrence Berkeley National Laboratory, presents "The Engineering of Biological and Nanomaterial Interfaces," as part of the Director's Distinguished Lecturer Series. Bertozzi's presentation focuses on the development of technologies for interfacing synthetic and biological systems at the nanometer scale.

Bruce Tarter, director emeritus, participates in a panel discussion on the success of the Stockpile Stewardship Program at the AAAS conference in San Francisco. Jane Long, associate director for Energy and Environment, leads a panel discussion on energy and climate security.

Harvard professor Graham Allison, director of the Belfer Center for Science and International Affairs, discusses the need for new U.S. initiatives and efforts to prevent nuclear terrorism during a Nonproliferation, Homeland and International Security (NHI) Colloquium.

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LOOKING BACK AT 2007

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Tom D'Agostino is named acting administrator of the National Nuclear Security Administration (NNSA) after Secretary of Energy Samuel Bodman announces the resignation of Ambassador Linton Brooks.

Lab physicist John Perkins discusses his novel "A Day in the Life" at the Livermore Public Library.

CAMS researcher Darren Hillegonds, with recently retired colleague John Vogel of LLNL's Center for Accelerator Mass Spectrometry, along with international researchers publish key results on a technique that could help prevent and treat osteoporosis.

Chemistry AD Thomas Diaz de la Rubia is tapped to be a co-editor in chief of the new Springer journal *Scientific Modeling and Simulation*. His co-editor in chief is Harvard professor Efthimios Kaxiras who works in the Lyman Laboratory.

David Goodstein, vice provost and professor of physics at the California Institute of Technology, presents "Out of Gas: The End of the Age of Oil."

MARCH

Science & Technology

The Department of Energy's National Nuclear Security Administration (NNSA) selects Lawrence Livermore and Sandia national laboratories to develop the Reliable Replacement Warhead (RRW).

Lab researchers review several detection technologies in the British journal *The Analyst*.

A system called Single-Particle Aerosol Mass Spectrometry or SPAMS, developed by Livermore scientists, is featured in *Analytical Chemistry*. The device can detect explosive, chemical and biological agents all at the same time.

The 11th annual Tri-Valley Science and Engineering Fair, hosted by the Laboratory, is held in Livermore. Nearly 300 local students in grades 7–12 participate with 230 project entries. A total of 216 special and project awards are presented.

The Nuclear Car Wash and Non-Equilibrium Warm Dense Gold teams are recipients of the Lab's Science and Technology awards, and are honored at a luncheon hosted by Director George Miller and Deputy Director for Science and Technology Cherry Murray.

Science on Saturday kicks off its Tri-Valley lecture series in Pleasanton with "The National Ignition Facility – Making Star Power on Earth," presented by Ed Moses, Richard Sawicki and Chris Ebbers of LLNL and Dan Burns, a teacher at Los Gatos High School.

The Defense and Nuclear Technologies Directorate hands out NNSA Weapons

Alison Burklund, an eighth grade Tri-Valley Science and Engineering Fair participant from Valley Montessori School, discusses her project with Tiziana Bond, an LLNL engineer.

A system called Single-Particle Aerosol Mass Spectrometry or SPAMS, developed by Livermore scientists, is featured in *Analytical Chemistry*. The device can detect explosive, chemical and biological agents all at the same time.

Awards of Excellence to four teams and two individuals for work performed in 2005 for outstanding contributions to the nation's nuclear weapons program.

People

The Lawrence Livermore Women's Association (LLLWA) celebrates Women's History Month in a reception that recognizes the organization's 35 years at the Lab. In the LLLWA annual scholarship ceremony, seven employees receive awards totaling $4,150.

Peter Fierlinger, an Austrian experimentalist working with Stanford University Professor Giorgio Grata, is awarded the first postdoctoral fellowship named after the Lab's Karl van Bibber.

Susan Hackwood, executive director of the California Council on Science and Technology, visits the Lab for briefings on energy, climate change and homeland security.

Operations

A new online self-service capability allows employees to view leave statements and vacation and sick leave history through LAPIS (Livermore Administrative People Information System).

LLNL breaks the record of the American Cancer Society Bay Area with the most teams formed by an organization — more than 50 — in the Active for Life program sponsored by Health Services and the Work–Life Center.

For the second consecutive year, UC recognizes the Lab for having the lowest workers' compensation rate in the system.

APRIL

Science & Technology

More than 30 Lab scientists and volunteers celebrate National DNA Day, April 25, with more than 700 fifth graders in Tracy who participate in the activity "Make Your Own DNA Jewelry."

Dennis Spurgeon, DOE's acting undersecretary of energy and assistant secretary of nuclear energy, visits the Lab for briefings and tours.

A review committee from the National Science Foundation (NSF) visits the Lab

Jennifer Links, a scientist at LLNL, assists fifth-graders with steps in creating DNA jewelry on National DNA Day.

in March to evaluate a UC-led bid to acquire, deploy and operate a petascale supercomputer.

LLNL physicist Peter Beiersdorfer co-authors a paper in *Physical Review Letters* describing excitation phases of Thorium-229.

The "Grand Challenge" scientific computing program allocates 83.7 million CPU hours to 17 research projects.

> "This would then be the first time human control would be exerted over nuclear levels."
>
> **— Peter Beiersdorfer, Lab physicist on the study of excitation phases of Thorium-229**

People

Ravdan Bold, the Mongolian Ambassador to the U. S., meets with Lab scientists Undrea Agvanluvsan and David Smith to discuss cooperative programs in nuclear security.

Operations

The Lab's Security Department announces that the Institutional Issues Tracking System for ES&H is expanded to include Safeguards and Security, for capturing assessments and related information.

The Lab celebrates "Earth Expo."

The Benefits Office expands its services to include half-day retirement election preparation sessions.

The Lab institutes a pre-employment drug test policy for all new hires.

MAY

Science & Technology

The National Ignition Facility reaches the 90 percent completion mark.

The Laboratory plays a part in preventing California's many natural hazards from turning into natural disasters as a participant in the new California Hazards Research Institute, a multi-campus research program of the University of California.

Astronomers discover the exact location and makeup of a pair of supermassive black holes at the center of the collision of two galaxies more than 300 light years away, using adaptive optics to clear blurring effects from turbulence in the atmosphere. The observations were made at the Keck Observatory in Hawaii, using a laser guide star built by LLNL.

The Hazards Control Department sponsors "Coherent to Visit LLNL — A Showcase of Coherent's Laser and Laser Measurement Solutions," featuring "Ultrafast

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LOOKING BACK AT 2007

NOTABLE QUOTES

"Transition isn't a revolution, it's an evolution."

Frank Russo, principal associate director for Operations and Business

"I consider election security to be an important aspect of national security. My goal is to assure that neither election error nor election fraud can be used to change the leadership of the nation or of any state. The legitimacy of democratic government depends on free, fair and secure elections."

David Jefferson of Computation and a leading expert in voting system technology

"I like to look at real problems and find something that really needs to be solved, and then do theoretical work to solve it… That's exactly what I've done at the Laboratory all these years. It's what really motivates me in my career – I get a big kick out of it."

Grace Clark on her selection as a fellow of the Institute of Electrical and Electronics Engineers (IEEE)

"Evenings and weekends. I wasn't looking for more work, but this is something good. I want to give back to the scientific community."

CMELS Associate Director Tomas Diaz de la Rubia on how he finds time to serve as editor of a new scientific journal.

"His fundamental respect and kindness for all around him, communicated with an infectious, gentle humor, was his richest, most personal and everlasting contribution, a gift he shared with all of us."

Retired Deputy Director Bill Lokke on the passing of Dave Hall

"The Lab is a big supporter of the greening of government."

Mishell Pendleton on the opening of the Lab's E-85 fuel station

"I was lucky. I'm doing this for those guys who gave their lives."

Retiree George Wagner on why he wrote his diary "One Man's Army: A soldier's 1941 diary."

"Science really never happens the way it is planned. New ideas come along and spark projects."

Sonia Létant, of the Lab's Chemical Science Division

"This is the ultimate recognition of the importance of this work as well as justification for why this type of research needs to continue."

Jane Long on the more than 40 Lab employees who contributed to the reports of the Intergovernmental Panel on Climate Change, which won the Nobel Peace Prize.

"This Laboratory, in my view, has a very bright future that is a continuation of the past and a bridge to the future."

George Miller, director, in May all hands following announcement LLNS, LLC had been awarded the contract to manage the Lab

"At first we thought we'd call ourselves Beethoven's dream. But then we realized that playing rock n' roll probably wasn't what Beethoven had in mind, so we called ourselves Beethoven's nightmare instead."

Steve Longo, a systems administrator in Computation who is deaf, on the genesis of his band

"He's a humble person, but a great patriot who rises above politics to serve our troops at the front and who will cut through any bureaucracy to get help to our war fighters. Lots of guys are alive and enjoying life today because of what he's done."

Commander Todd Veazie of the Pentagon paying tribute to LLNL's Hriar Cabayan

"NIF will soon provide capabilities for a new age of science in high energy density physics. We are excited about the progress that we have made and are on track for another great year."

Ed Moses, NIF principal associate director

"You are all well aware of the tremendous significance of what you do — and the pivotal national value of NNSA's mission. During this time of transition, Tom and I — and more importantly, the American people — are counting on you to continue to perform with the same sense of urgency and professionalism for which you have become known."

Secretary Bodman speaking to NNSA employees about complex transition.

"Using underground coal gasification, the United States has hundreds and hundreds of years worth of natural gas and hydrogen, if we go after it."

Ray Smith, an LLNL mechanical engineer

"Fusion has the largest energy potential of all options for the future with many attractive features. The problem of radioactive waste is greatly reduced compared to fission. The fuel is widely available, with one barrel of seawater containing roughly the equivalent to 300 barrels of oil in the hydrogen isotope deuterium."

John Lindl, chief scientist for the National Ignition Facility

"The university's values of intellectual integrity, commitment to public service, and passion for mission are part of the fundamental fabric of our Laboratory culture, and our connection to UC will endure for as long as we share those values."

Laboratory Director George Miller, in the UC commemorative special section of *Newsline*

"It's really amazing how trees can live as almost bare twigs on slopes until they get a wet year and take off."

John Toeppen on the proliferation of oak trees

"Jimmy Stewart, but he's dead so that's not going to happen."

Steve Liedle when asked what actor he would want to play him in a movie.

2007 TECHNOLOGY AWARDS & EMPLOYEE RECOGNITION

From left to right are Jim Glosli, Fred Streitz, Robert Rudd, David Richards and Kyle Caspersen, who won the Gordon Bell Award at the SuperComputing 2007 Conference (SC07) in November. IBM's John Gunnels is not pictured.

Award highlights include: a Lab team that won a longstanding competition within the National Nuclear Security Administration to design the proposed Reliable Replacement Warhead (RRW); four teams and two individuals received NNSA Weapons Awards of Excellence; a LLNL Advanced Simulation and Computing program team won the prestigious Gordon Bell Prize — for the third year in a row; Lab teams won five R&D 100 awards, also called Oscars of invention; and some 40 Lab scientists saw their efforts to help understand climate change win recognition when the report by authors around the world shared the Nobel Peace Prize.

Employees earned more awards and recognition than can be listed here. But following are some highlights from what was another banner year for Laboratory science and technology.

"This is the ultimate recognition of the importance of this work as well as justification for why this type of research needs to continue."

— Jane Long on the more than 40 Lab employees who contributed to the reports of the Intergovernmental Panel on Climate Change, which won the Nobel Peace Prize.

John Lindl

Twenty-two LLNL employees receive journeyman certification. The workers completed a four-year training program that qualifies them for journey-level crafts or machinist positions in the Lab's Plant and Mechanical Engineering departments.

The Federal Laboratory Consortium for Technology Transfer Far West Region recognizes two "outstanding commercialization successes:" the fission meter garners an award for **Mark Rowland, Dan Dietrich**, and **Ray Pierce**, as well as **Catherine Elizondo** of the Lab's Industrial Partnerships and Commercialization Office (IPAC); recognition also comes for the silver reflector for high efficiency solar cells that was commercialized by **Dave Sanders, Jesse Wolfe** and **Ted Saito**, as well as **Randall Elder** of IPAC.

John Lindl, chief scientist for the National Ignition Facility, is awarded the 2007 James Clerk Maxwell Prize in Plasma Physics by the American Physical Society.

George Chapline is named the winner of the CASYS07 Award for his work on neural networks and the brain.

The Lab's ***Science and Technology Review (S&TR)* magazine** wins an Award of Excellence in the magazine category from the Society for Technical Communication.

Lab Director George Miller presents the 2007 Edward Teller Fellowship awards to two LLNL scientists: **Henry Chapman** and **Dmitri Ryutov.**

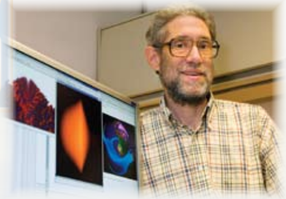
Two Lab scientists are recognized by *Science Spectrum* magazine. **Kimberly Budil**, associate B program leader, S&T experiments, is awarded the 2007 Top Minorities in Science "Trailblazer Award." Computer scientist **Dean Williams** wins the prestigious Senior Investigator Emerald Award.

Henry Chapman

The American Society for Training & Development recognizes the Laboratory's **AHRD/Employee Organization and Development Division** as a winner of the BEST award in the competition ranking the leading organizations known for enterprise-wide employee learning and development.

Ronit Ben Abraham Katz, lead treating physician at the Lab's Health Services Department, receives the American Medical Association Foundation's 2007 International Medical Graduate Physician "Excellence in Medicine and Leadership Award."

Jennifer Giocondi, a postdoc in the Glenn T. Seaborg Institute of the Chemistry, Materials, Earth and Life Science Directorate, wins a prize for her presentation at a Materials Research Society Spring meeting. Giocondi was honored for her poster, "An In-situ AFM Study of the Affect of Magnesium Impurities on Brushite Growth."



Nelson Max

Nelson Max of Computation receives the Steven A. Coons Award for Outstanding Creative Contributions to Computer Graphics at SIGGRAPH 2007 in San Diego.

Lab employee **Greg Simonson** is honored with a Department of the Air Force medal for "Exemplary Civilian Service" for his efforts to help protect the nation's capital and surrounding region from terrorist attacks.

The Laboratory's counterintelligence and counterterrorism effort, called the **Security Awareness for Employees (SAFE) Program**, earns top marks in a Department of Energy inspection for the second time in a row.

Energy and Environment researchers **Ken Bogen** and **Ed Jones** earn the 2006 Best Paper for Risk Analysis award from the Society for Risk Analysis (SRA).

Peter Fierlinger, an Austrian experimentalist working with Stanford Professor Giorgio Grata, is awarded the first postdoctoral fellowship named after the Lab's Karl van Bibber.

Dmitri Ryutov

Lab physicist **Hope Ishii** is selected for the Alameda County Women's Hall of Fame as the 2007 Outstanding Woman in Science, making her the fifth woman from the Lab to be inducted into the Women's Hall of Fame.

David Keyes of the Computation Directorate's Institute for Scientific Computing Research receives the 2007 Sidney Fernbach Memorial Award.

Moe Dehghani is named a member of the American Society of Technical Engineers' Committee on Engineering Accreditation. He will chair the society's engineering review teams.

Former LLNL Associate Director for Energy **David Baldwin** receives the 2007 Distinguished Career Award from Fusion Power Associates for his leadership and contributions to the field. He works for the gas-reactor company Powered Corp.

Lab computer scientist **Maya Gokhale** is named a fellow of the Institute of Electrical and Electronics Engineers (IEEE) for her contributions to reconfigurable computing technology.

Former Laboratory postdoc **Shawn Newsam**, now an assistant professor at UC Merced, wins the Presidential Early Career Award for Scientists and Engineers.

Retired Lab physicist **Ken Kulander** receives the American Physical Society's 2008 Will Allis Prize for the study of ionized gases.

Physicists **Thomas Luu, Ron Soltz** and **Pavlos Vranas** of the Physical Sciences Directorate win a Computing in Science and Engineering magazine essay contest by describing what they would do if they had one petaFLOP of computing power at their fingertips.

Maya Gokhale

Tomas Diaz de la Rubia, associate director for the Chemistry, Materials, Earth and Life Sciences Directorate, is awarded the distinction of fellow of the American Association for the Advancement of Science. He is honored for distinguished contributions to computational materials science and the understanding of radiation damage in materials.

Arpith Chacko Jacob, a summer student in the Computation Directorate, wins one of the HPC Fellowship awards

Peter Celliers, Jim De Yoreo and **Denise Hinkel** are named fellows of the American Physical Society (APS).

Diane Spencer is elected a fellow of the American Institute of Chemical Engineers (AIChE).

Tomas Diaz de la Rubia

Grace Clark, an electrical engineer in the Lab's Engineering Directorate, is elevated to the grade of Fellow by the Institute of Electrical and Electronics Engineers (IEEE), as a result of her pioneering contributions to adaptive filtering.

Chemistry, Materials and Life Sciences researcher **Sarah Chinn** wins the Mary Lyon Award from her alma mater, Mount Holyoke College in Massachusetts. The award is given to an alumna who demonstrates promise or sustained achievement.

Petter Celliers

Patrice Turchi of the Materials Science and Technology Division of the Chemistry, Materials, Earth and Life Sciences Directorate wins the 2007 Al Sonntag award from the Society of Tribologists and Lubrications Engineers (STLE).

The Lab receives a Corporate Recognition Award from the American Cancer Society Regional Vice President **John Lazar** at a ceremony in Bldg. 543. The award recognizes the Lab's consistent outstanding charitable contributions and leading effort in cancer awareness and research.

Dylan Rood, a scholar in the Lab's Center for Accelerator Mass Spectromety, wins honorable mention in the 2007 AAAS student poster competition.

The Lab's Fusion Energy Education Website, **FusEdWeb,** is selected as an official honoree for the science category in the 11th Annual Webby Awards.

Denise Hinkel

Adaptive optics scientist **Scot Olivier** is named one of 56 new fellows of the International Society for Optical Engineering.

BlueGene/L wins three out of four of the high-performance computing challenges at the 2007 SuperComputing Conference in Reno, Nev.

LOOKING BACK AT 2007

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Laser Presentation – Armani Meets Femtosecond Lasers: Perfect Tailoring for Every Ultrafast Event."

The Lab's popular "Got Science? Discover Science Saturday," travels to Tracy.

The RRW project officers meet at Livermore. This group is now termed the WR1/Mk5A Project Officers Group, or POG.

The Joint Genome Institute sets the 'Gold Standard' for meta-genomic data analysis.

Operations

"The first thing I want to speak to is who I work for; I work for Lawrence Livermore National Laboratory, not Bechtel… LLNS – Yes, they pay the bills – but LLNS is a ream of paper that establishes a contractual relationship. It's not an entity, it's not flesh and blood and it's not the body and soul that I've found in the first month I've been here."

— Frank Russo, principal associate director for Operations and Business, in June town hall meeting

DOE/NNSA announces that the contract to manage the Laboratory is awarded to Lawrence Livermore National Security, LLC (LLNS), beginning the formal process to transfer management responsibility from UC to LLNS.

The Lab hosts its annual Administrative Workshop.

LLNS mobilizes its senior leadership to prepare to manage and operate the Laboratory.

LLNS President George Miller kicks off the first in a series of town-hall meetings with Livermore employees and announces his key personnel within the LLNS organizational structure.

In honor of Asian Pacific American History Month, the Asian Pacific American Council and the Work-Life Center sponsor a presentation by William Poy Lee, author of "The Eighth Promise."

The Lab opens its new E85 fuel station and becomes a test site for ethanol with the largest fleet of E85 fueled vehicles in the state.

A pilot production test of the Laboratory Integrated Network for Contracts and Supply (LINCS) purchase request and requisition applications successfully concludes.

All Websites hosted on the Lab's Institutional Web infrastructures, both internal and external, begin migration to the new Institutional Web infrastructures.

The "Active for Life" program holds an award ceremony with LBL and Sandia California to motivate employees to pursue healthy lifestyles.

The Lab's E85 fuel station opens.

Tom Giaconda, transition manager for LLNS and Barbara Peterson, transition manager for LLNL.

To address the resurgence of Valley Fever in the Laboratory population, the Safety and Environmental Protection Directorate and Site 300 management conclude a series of education and training initiatives.

The Employee and Organization Development Division announces a new career development Website.

A delegation from South Korea visits the Lab for briefings and tours.

A mountain lion sighting occurs on the east side of Sandia property.

In honor of Memorial Day, the Laboratory Armed Forces Veterans Association and the Work-Life Center conduct a flag dedication ceremony in the Bldg. 111 Lobby. The flag is given to the Lab by Jeff Freeman of the Hazards Control Department, who brought it back from Afghanistan in 2004 after serving as a helicopter pilot with the U.S. Marine Corp.

People

The Lab's Hriar Cabayan is recognized by the Pentagon for more than a decade of service.

Livermore researchers Rulon Linford and Bill Nevins are appointed to serve on an advisory panel to DOE's Fusion Energy Sciences Advisory Committee.

Rear Admiral Stephen Johnson, director of the Strategic Systems Programs for the U.S. Navy, visits the Lab for briefings and tours.

In a tribute to the late Tony Carrano, Robert Cook-Deegan, director for the Center for Genome Ethics, Law, and Policy at Duke University's Institute for Genome Sciences and Policy and a friend of Carrano's, discusses the impact on the Human Genome Project in a Director's Distinguished Lecturer Series talk.

Thomas D'Agostino is nominated as NNSA Administrator by DOE Secretary Samuel Bodman.

Members of the French Commissariat a L'Energie Atomique (CEA) and the Nuclear Weapons Advisory Committee visit the Laboratory for briefings and tours.

JUNE

Science & Technology

The Center for Accelerator Mass Spectrometry contributes to research published in the *Proceedings of the National Academy of Sciences* showing that once-abundant northern fur seals lived year-round along the coast of California, according to radioisotope dating.

The BlueGene/L supercomputer is first on the Top500 list of the world's fastest computers for the third year in a row, according to a twice-annual ranking released at the International Supercomputing Conference in Germany.

LOOKING BACK AT 2007

Lawrence Livermore is selected to be among the three laboratories forming the new Department of Energy Joint BioEnergy Institute in Berkeley, along with Lawrence Berkeley and Sandia national laboratories. Research will center on biofuels, such as processes to efficiently derive ethanol from cellulose.

The National Ignition Facility

The National Ignition Facility turns 10.

Collaborators from LLNL, Daresbury Laboratory in the United Kingdom, and Oak Ridge National Laboratory fill a gap in understanding how magnetism makes curium crystal structure more stable. Their paper in *Physical Review Letters* shows through modeling and imaging that extreme pressure in a diamond-anvil cell forces unpaired electrons into different orbitals, lowering their total energy.

TomoTherapy licenses the Laboratory's compact proton accelerator technology to develop a cancer treatment prototype for clinical testing in conjunction with the UC Davis Cancer Center. George Caporaso is the Lab's lead scientist on the project.

How a spore breaks out of its dormant state becomes a little clearer with atomic force microscopy of a single, germinating bacterium. The work by collaborators from Northwestern University, the Children's Hospital Oakland Research Institute and LLNL's Marco Plomp and Alexander Malkin, appears in the *Proceedings of the National Academy of Sciences*.

People

Employees launch a new California chapter of the Institute of Nuclear Materials Management, an international professional association. Officers are Mona Dreicer, Rusty Babcock and Greg White.

Ten engineers and physicists visit an operational North Dakota ICBM site, the Air Force's 5th Bomb Wing at Minot Air Force Base, in a tour organized by Ed Turano.

Operations

The Laboratory's Facility Governance Board and the Operations Council approve removal of eucalyptus trees whose structural integrity is in question.

The Lab transitions to an Alameda County computer-aided emergency dispatch system.

"Some people see stroke victims' weaknesses and void them. I learned that it is best to encourage the stroke patient to utilize and strengthen the areas affected," says Karen Ballou on how she helps her husband, Howard Swartz, who is a stroke victim, shown above.

JULY

Science & Technology

Laboratory scientists and engineers garner five R&D 100 awards for developing cutting-edge technologies with commercial potential, giving LLNL 118 such awards since 1978.

A team of researchers from LLNL and the Scripps Institution of Oceanography announces a study that finds that climate models are reliable tools for helping researchers better understand the observed record of ocean warming and variability.

A new study by LLNL scientists, using the Accelerator Mass Spectrometer, enhances the current understanding of damaged nucleic acid incorporation and repair in DNA.

LLNL signs a technical agreement with BP to work cooperatively on the development of underground coal gasification. The agreement focuses on evaluating the feasibility of storing carbon dioxide underground; environmental risk assessment and management; and numerical modeling of the processes to understand how the models match pilot test results over time.

The expanded BlueGene/L supercomputer sets a new world mark for speed.

People

The Laboratory co-sponsors an eight-week summer pilot program, "Aspiring Science Teacher Research Internship," with 15 participants from the California State University system. The program provides students with a summer research internship opportunity at LLNL.

U.S. Sen. Bill Nelson of Florida, chair of the strategic forces subcommittee of the Senate's Armed Services Committee, visits the Laboratory, receiving briefings about stockpile stewardship, the RRW, NIF and nonproliferation. He is joined by Rep. Ellen Tauscher and Tom D'Agostino, then deputy administrator for Defense Programs for NNSA.

Members of the Defense Science Study Group, part of a Defense Advanced Research Projects Agency program, visit the Laboratory.

Ray Juzaitis, the associate director for Nonproliferation, Homeland and International Security, accepts a position as the head of the Department of Nuclear Engineering at Texas A&M University.

Ed Synakowski, LLNL's Fusion Energy program leader, is invited to be part of an international committee to develop the initial International Tokomak Experimental Reactor (ITER) Research Plan.

Operations

A large cobalt-60 source, nicknamed "Big Red," that was used for radiography by several Laboratory programs and is no longer needed, is sent to the Nevada Test Site for disposal.

The NNSA approves a benefits package for LLNL that is similar to the package being offered to Los Alamos National Laboratory employees.

Job offer letters are mailed to Laboratory employees by the LLNS organization.

The Laboratory announces it will implement a new biweekly payroll schedule for exempt employees (currently monthly paid employees) effective Oct. 1, a direct result of California labor law.

AUGUST

Science & Technology

With the aid of NanoSIMS (high-resolution secondary ion mass spectrometer), scientists from LLNL, USC and Portland State University show that they can image and track nutrient uptake in blue green algae at the nanoscale level.

Algeria becomes the latest North African nation to join the Department of Energy's Sister Lab Program, created to establish cooperation with countries developing nuclear energy for peaceful purposes.

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LOOKING BACK AT 2007

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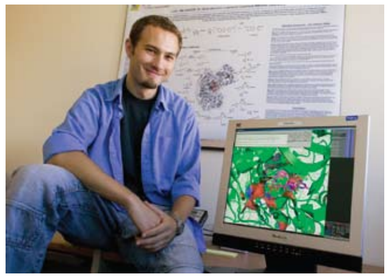
As part of a solemn ceremony to remember the events of September 11, the honor guard folds the flag that flew at the Superblock.

A team of LLNL researchers uses Sir Isaac Newton's "dusty mirror" experiment as a launching pad to watch the X-ray induced explosion of microscopic objects.



Gert Kiss, a Computational Chemistry and Materials Science intern, uses complex computer simulations to understand bioluminescence.

Scientists use complex computer simulations to deduce how beetles' bioluminescence occurs in an effort to assist in the creation of new-generation imaging probes for research and medicine.

Workers at the Lab's Big Explosive Experimental Facility at the Nevada Test Site execute helical hydrodynamic test one, or HHT-1. The shot is a part of an effort to better understand the properties of materials at extreme pressures.

Livermore researchers investigate the potential use of carbon nanotubes as tissue scaffolding for cartilage growth and joint regeneration.

People

Nearly 60 people associated with the Nuclear Weapons Council, a joint Department of Defense and DOE/NNSA organization, visit Lab stockpile stewardship facilities.

UC President Robert Dynes announces he will step down as president by June 2008.

Operations

Plans are made for the demolition of Bldg. 212.

The DOE Joint Genome Institute announces it will celebrate its tenth anniversary in Walnut Creek next year with a new lease and expanded facilities.

LLNL's recently launched Environmental Management System becomes a framework for promoting and implementing responsible environmental stewardship.

SEPTEMBER

Science & Technology

Soil Biology & Biochemistry reports in its August issue on the application of NanoSIMS (high-resolution secondary ion mass spectrometer) to study soil micro-habitats and microbes. Jennifer Pett-Ridge, a Laboratory post-doctoral researcher, is co-author.

The two-year process of sequentially testing all 96 beams in one of NIF's two laser bays ends.

The *Proceedings of the National Academy of Sciences* publishes an online study showing that human activities are tied to an increase in atmospheric moisture. The paper is authored by Benjamin Santer, Karl Taylor, Peter Gleckler, Jim Boyle and Stephen Klein.

Nature Physics' online version publishes results of modeling and experiments from NIF's Early Light campaign, whose close agreement between data and predictions shows the facility is on-track for full operation in 2009.

A collaboration of researchers from the Lab and the Centers for Disease Control shows that smallpox evolved much earlier than previously believed. The research appears in the *Proceedings of the National Academy of Sciences*.

The discovery of the spin transition zone of iron in the Earth's lower mantle by Lawrence fellow Jung-Fu Lin and colleagues appears in *Science*. The findings will help to explain how seismic waves travel through the Earth.

Operations

Director George Miller tells employees that the NNSA has asked its laboratories to plan for FY 2008 budget uncertainties.

The transition to management by LLNS is complete.

DOE decides to consolidate surplus non-pit plutonium at Savannah River.

People

NIF holds a large, day-long Open House for all Lab employees, followed by an Open House for family members and guests the next day.

The Laboratory holds a celebration to reflect on six decades of UC leadership in an event that includes a special commemorative video and reflections by a panel of former directors, deputy directors and associate directors.

Six decades of UC leadership are commemorated in a special edition book.

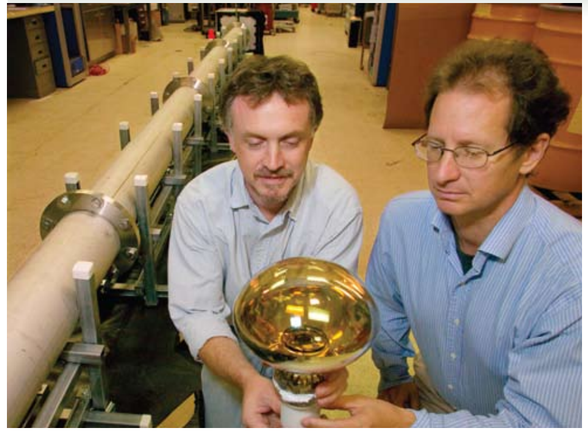
OCTOBER

Science & Technology

The Advanced Detector's Group's Adam Bernstein, Nathaniel Bowden and Steve Dazeley join with LLNL physicist Robert Svoboda and Sandia researchers to demonstrate the utility of antineutrino detectors to safeguard fissile material in a trial at the San Onofre Nuclear Generating Station.

Nature Nanotechnology publishes research showing the force with which chemical functional groups interact with carbon nanotubes. The research is a collaboration between the Lab's Aleksander Noy, Raymond Friddle, Melburne LeMieux and Alexander Artyukhin, working with researchers from the Georgia Institute of Technology, the University of Turin, UC Berkeley and UC Davis.

LOOKING BACK AT 2007



Adam Bernstein and Steve Dazeley examine one of the 8-inch diameter photomultiplier tubes that are used to collect light generated by antineutrino interactions in both the water and scintillator detectors. The 30-foot-long, water-filled, stainless steel tube on the left is a UV laser-based system that measures the clarity of the gadolinium-doped water under a range of conditions.

People

More than 450 community leaders hear from Laboratory Director George Miller and Ed Moses, principal associate director of the National Ignition Facility and Photon Science, at the new Bankhead Theater in downtown Livermore during the Lab's Community Leader Day.

2007 Community Leader Day

Operations

LLNS contracts with the Alameda County Fire Department to provide emergency services to the Laboratory.

Sodexho Federal Food Services becomes the cafeteria vendor.

Energy-efficient photovoltaic lights are installed to illuminate the pathway along the east shore of Lake Haussmann. The light standards use bright LED lamps.

NOVEMBER

Science & Technology

The Laboratory participates in the "Getting the Job Done" teleconference, which highlights the Defense Programs' successes in FY 2007.

The Lab hosts the annual Center for Advanced Signal and Image Sciences conference on site.

A team of engineers and managers from the Abandoned Mine Lands department visits the Lab to discuss remediation of abandoned uranium mines and other environmental issues facing the Navajo Nation.

Former Lab researchers Francesco Marchetti and Andrew Wyrobek determine that maternal DNA-repair efficiency is responsible for the extent that DNA defects from sperm persist in embryos.

The recently expanded BlueGene/L maintains its ranking as the world's fastest supercomputer on the "Top500" list of world's fastest supercomputers.

Lab researchers develop a new system that can detect viruses in sample amounts one million times smaller than possible in current commercial instruments and with about half of the analysis steps.

A team of doctors, scientists and engineers from UC Davis and LLNL receive a five-year, $8.5 million grant from the National Institutes of Health that will be used to focus on point-of-care testing.

People

Former Los Alamos National Laboratory Director Sig Hecker delivers a keynote address to Laboratory employees to discuss the nuclear capabilities of North Korea.

Lab employee John Toeppen plants acorns to help propagate native oak trees in the Livermore valley.

About 150 motorcyclists participate in Lab ride IV to raise funds for the Marine Corps' Toys for Tots Drive and the East Bay Stand Down 2008, a homeless veterans' outreach program. The riders donate $2,374.

Flex-term employees and supplemental laborers receive written notification under the WARN Act (Worker Adjustment and Retraining Act) regarding workforce reductions planned by the end of January 2008.

NIF's John Lindl delivers a Director's Distinguished Lecture about the three-decade countdown to experiments to ignite a controlled thermonuclear burn using the world's largest laser.

Storyteller Marty Puthoff of the Lakota Rosebud Sioux nation speaks at the Lab in honor of Native American History Month.

Mina Bionta, a Livermore High School alumnus, is one of the 2007 Edward Teller Science Scholarship winners.

Operations

The HOME (Helping Others More Efficiently) Campaign kicks off.

The Run for HOME kicks off the 2007 campaign.

The old Institutional Web Infrastructure is retired Nov. 30.

The Lawrence Livermore Laboratory Women's Associations holds its used book sale.

In an all-hands address, Director George Miller outlines a number of steps the Lab must undertake, including a reduction of 500 flexible workforce employees, to address budgetary challenges it faces in fiscal year 2008 and beyond.

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LOOKING BACK AT 2007

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Deputy Director Steve Liedle leads a Labwide effort to reduce operating costs and expenses with a direct goal of implementing $35 million in cost-savings in 2008.

The Lab resolves to cut energy use by 9 percent from the amount consumed in fiscal year 2007, a savings of approximately $2.1 million.

Health Services implements several changes to services to cut costs.

Employees send in suggestions to cut costs through save-dollars@llnl.gov e-mail.

DECEMBER

Science And Technology

The Joint Actinide Shock Physics Experimental Research (JASPER) team accomplishes four plutonium experiments that determine its final pressure, density and internal energy of plutonium when compressed by a shock wave.

LLNL researchers, in conjunction with MIT, create the first quantum molecular dynamics simulation of a shocked explosive near detonation conditions.

The installation of NIF's final optics begins.

Lab researchers along with UC Davis colleagues use accelerator mass spectrometry to understand variations in chemotherapy drug action.

The Joint Actinide Shock Physics Experimental Research (JASPER)

People

The Security Organization's Protective Force Division Training Group graduates eight new security police officers.

The security organization graduates eight new police officers.

At the annual American Geophysical Union conference, LLNL's Benjamin Santer participates in a press conference about how greenhouse gases reduce the amount of water available in the Western United States.

Vic Reis, senior adviser to the Energy secretary visits the lab and conduct briefings with senior Lab managers.

Operations

The Lab's 3161 Specific Workforce Restructuring Plan is finalized.

As a result of contract transition, employees are subject to pay California State Disability Insurance (CA SDI).

The Laboratory launches a cost-cutting initiative in information technology and an "Every Watt Counts" campaign to save energy.

A workforce brokering committee is established to place employees who are currently between assignments into existing openings.

The Laboratory begins a paper reduction initiative to reduce costs by limiting the number of fliers distributed through Lab mail.

LLNS selects a trustee and investment manger to help administer the LLNS Defined Benefit Pension Plan.

LLNS receives approval from NNSA on a list of benefits-value comparators to fulfill one of its requirements in maintaining its current Total Compensation Package (TCP-2).

The HOME campaign closes with a total amount (including a $1 million matching funding from LLNS) of $2.4 million and 29 percent participation rate.

The NNSA unveils plans for Complex Transformation.

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